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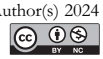
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Introduction: Conceptualising heterodox palaeoscience

Richard Fallon[1,2] and Edward Guimont[3]

Abstract

This introduction to a special issue on 'Conceptualising heterodox palaeoscience' contemplates what it means to consider particular interpretations of aspects of Earth's history 'heterodox' rather than 'orthodox', given that scientific understandings of this subject have undergone dramatic changes in recent centuries, accelerating in recent decades. Drawing on scholarship about the relationship between palaeoscience and religion, and about the textual forms adopted by practitioners dismissed as 'pseudoscientists', we reflect on how, where, and by whom the boundaries of palaeoscientific orthodoxy tend to be negotiated. After outlining the diverse contents of the special issue, which range from discussions of the writings of Johann Wolfgang von Goethe to analysis of the Godzilla film franchise, we finishing by examining the present popularity of one highly controversial form of heterodox palaeoscience: pseudoarchaeology.

Keywords

Geology, palaeontology, science and religion, pseudoscience, fringe science, science writing, pseudoarchaeology, disciplinarity

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In July 1893, the British weekly *Spectator* reviewed Henry Hoyle Howorth's controversial new two-volume book, *The Glacial Nightmare and the Flood*. This dense work argued that the physical traces typically taken as signs of extensive glaciation in the Pleistocene epoch – an ice age or glacial period – were more properly attributed, as global lore attested, to a catastrophic flood. Howorth, a Conservative Member of Parliament for Salford South (now in Greater Manchester), mischievously characterised his opponents as enrapt by dogmatism. Flood theory had been 'the creed of the orthodox in geology' until the middle of the nineteenth century, when the 'glamour' of the eminent geologist Charles Lyell, with his criticism of recourse to unprecedented catastrophes in geological explanation,

[1]School of English, University of Nottingham, Nottingham, UK
[2]Collections and Culture, Natural History Museum, London, UK
[3]Department of History and Social Science, Bristol Community College, Fall River, MA, USA

Corresponding author:
Richard Fallon, Room C43, Trent Building, University Park, Nottingham, NG7 2RD, UK.
Email: richard.fallon@nottingham.ac.uk

had 'diverted men's minds into the paths of metaphysical and *à priori* reasoning' (Howorth, 1893: II, 891). To oppose glacial theory in favour of an extraordinary flood had since become a heterodox stance: that is, one contravening widely accepted notions within the geological community. Howorth also drew on the register of religious heterodoxy by casting himself as a one-man Reformation, sweeping away stagnant doctrines by returning the flood to the centre stage of recent geohistory. The *Spectator's* reviewer, however, reflected that the term Howorth employed for the object of his wrath, '*Glacial Theory*', was 'not very useful, as it, like the words 'orthodoxy' and 'heterodoxy', conveys quite a different idea to different persons' (Anonymous, 1893: 114). After all, Howorth's contributions regularly appeared in leading scientific periodicals, and his work was widely and often sympathetically reviewed across the British press. In what sense, where and to whom, then, was his catastrophism 'heterodox'?

These questions are not just applicable to the geological bugbears of a late Victorian politician. The history of palaeoscience – a term here used as a shorthand for related sciences like geology, palaeontology and archaeology (for a precedent, see Ramaswamy, 2004: 16) – is studded with upheavals in which what once seemed heterodox became orthodox. Formerly idiosyncratic or fringe concepts, such as evolutionary theory, the antiquity of humanity, continental drift and the asteroid that killed the dinosaurs, have been absorbed into widespread scientific consensuses. Others, like Howorth's neodiluvialism and Immanuel Velikovsky's mid-twentieth-century cosmic catastrophism (Gordin, 2012), made a splash in ways that did not recruit lasting support among the scientific elite, whatever their popularity elsewhere. Conversely, concepts that were once part of the thinking of many high-ranking scientific practitioners, such as the recent creation of Earth (Moore, 1986), pre-Columbian White colonisation of the Americas (Colavito, 2019: 17–20), or the existence of sunken continents like Lemuria (for which, again, see Ramaswamy, 2004), were slowly relegated beyond the borderlines of legitimacy.

Dramatic intellectual shifts are no embarrassment to scientists, for whom these shifts can represent innovation and progress. While Howorth's contrarian attacks on the conservatism of geologists may appear provocative, they were hardly out of keeping with rhetoric uttered by more formally qualified contemporaries. William Diller Matthew, curator of vertebrate palaeontology at New York's American Museum of Natural History, pronounced that '[h]eterodoxy is of the life of scientific doctrine' and the main antidote to the 'decadence' induced by 'geologic dogma' (1912: 307). Even for such an eminent palaeontologist as Matthew, this tension between heterodoxy and orthodoxy, which required distinguishing the proverbial Copernicus from the ubiquitous crank, kept modern science vital.

This special issue asks how, and to what extent, palaeoscientific thinkers have sought orthodox status for ideas considered strange or even revolutionary, as well as asking how these ideas have been or can be engaged with. Furthermore, it explores how defiantly heterodox ideas survive, evolve and thrive in channels beyond the publishing and communication mechanisms of elite science, from novels to billboards. As the essays show, reinterpreting the events and inhabitants of the deep past in ways that are intellectually or spiritually meaningful, and exciting, whatever one's scientific qualifications, is a widespread cross-cultural pursuit that is not going anywhere. Understanding it requires careful attention to many matters, of which localised religious context and the relationship between form and scientific content are just two of the most pertinent.

Shifting attitudes to the sciences' connections with religious belief are undoubtedly key to the negotiation of heterodoxy and orthodoxy, and not simply due to the associations of these very terms with disputes over matters of doctrine. Before the latter half of the nineteenth century, Judeo-Christian frameworks were implicitly or explicitly present during high-level discussions of Earth's deep history in Western science. Indeed, these were often fundamental to directing the investigation of that history (Rudwick, 2014: 4), resulting in many schemata for reconciling the Genesis narrative with geologists' conclusions to the satisfaction of various audiences (Moore, 1986; O'Connor, 2007). The subsequent

trend towards a 'privatisation' of religious belief in scientific discourse (Numbers, 2009) meant that, as the nineteenth century closed, palaeoscientists wishing to promote theistic interpretations of prehistory – or rather, those wishing to do so in the increasingly professionalised and institutionalised context of high-level scientific communication – required more circumspect presentation. Given his precarious proximity to biblical literalism, Howorth's declaration that the Noachian Flood described in Genesis is 'interesting as an early example of a widespread tradition, and nothing more' (1893: I, xxii–xxiii), was surely instrumental in ensuring that his ideas were taken seriously in periodicals like the *Geological Magazine* that operated on an agnostic basis.

Being taken seriously in such spaces is by no means the only motivating factor for those wedded to contested readings of Earth's history, however, nor is Christianity the only religion routinely used as a lens for understanding that history. For example, the Noachian Flood is far from a mere folkloric anecdote to those for whom – drawing on Judeo-Christian, Islamic, ancient Mesopotamian and other traditions – the landing of Noah's ark in the Anatolian mountains is a point of spiritual and geopolitical importance (Zeynep, 2023). This is not to say that the incorporation of overtly religious ingredients into modern palaeoscience necessarily leads to interpretations acceptable only to interested populations and groups, or to ultra-politicisation and controversy. When nineteenth-century British geologists raided Hindu texts and sacred geographies to understand the Indian landscape's prehistory (Chakrabarti, 2020), or when twentieth-century Dutch geologists learnt from syncretic Javanese Islam in their contribution towards the development of plate tectonics (Bobbette, 2023), spiritual associations were not tarred with the brush of heterodoxy. The digestion, visibility and function of religious content all relate to matters of heterodoxy in modern science.

While belief, including conspiracy culture and matters of group solidarity, is a powerful motivator for those propounding avowedly heterodox views of Earth's deep history, those views must also take tangible form. Historian of science Michael Gordin has memorably observed that the concept of pseudoscience – a concept that defies a concisely ahistorical or otherwise universal definition – relies upon 'the notion of imitation, or, to use a literary term, mimesis' (2012: 232). Those accused of peddling pseudoscience are often seen as spuriously adopting the generic conventions of science. When John C. Whitcomb and Henry M. Morris sought to put Young Earth Creationism on a serious intellectual footing in *The Genesis Flood* (1961), they knew that an apparatus of scholarly footnotes, schematic diagrams, thematic subsections, appendices, indices and a measured authorial voice would send the right signals about their rigour, at least for audiences of educated evangelical Protestants. Discovering a lonely library copy of one of Howorth's stodgy and studious works provided Whitcomb and Morris (1992: 292–293) not just with a fount of relevant research on the Noachian Flood, but also a useful formal exemplar for challenging mainstream scientific orthodoxy in print.

Critics in intellectual periodicals have often seen their role as helping non-specialist readers, or those from other disciplines, to detect the marriage of heterodox hypotheses with imposing textual presentation, and to distinguish legitimate from illegitimate science. For instance, *Nature*'s reviewer remarked that 'the unwary and but slightly scientific reader almost trembles before such a weight of authority' on display in one of Howorth's earlier books (Anonymous, 1887: 124), even if, upon closer inspection, his arguments betrayed 'a curious want of mental perspective' (125). Nonetheless, the centrality of very specific formal elements in making a publication signal its respectability is a comparatively modern development in scientific culture, epitomised by the ubiquity of the short, jargon-heavy scientific article (Csiszar, 2018: 31, 37, 211; McDougall-Waters and Fyfe, 2022: 394). It has not always been so straightforward to signal scientific presentation as it is today. Indeed, some of the fiercest controversies in the history of science have taken place when differing conceptions of the textual forms of palaeoscience, and the proper character of a palaeoscientific author, clashed in public (e.g., Secord, 2000).

The above comments form a necessarily brief overview of the kinds of questions addressed by our contributors, whose articles can loosely be arranged into two groupings. The first of these concerns heterodoxy in relation to scientific disciplines. Judyth Sassoon focuses on Johann Wolfgang von Goethe, whose early nineteenth-century writings on palaeontology exemplify Romantic non- or pre-disciplinary thinking. In 'The Metamorphosis of the *Megatherium*: Examples of Goethe's Heterodox Palaeontology', Sassoon shows how Goethe's engagement with recent publications on extinct animals like the aurochs and giant ground sloth led to some of his most daring scientific speculations. At a time when the 'transformism' that would later be called evolutionary theory was commonly viewed with deep suspicion and associated with radical thinkers like Erasmus Darwin and Jean-Baptiste Lamarck, Goethe considered how the inner strivings of animals like sloths might have led to enduring changes of bodily form. The fabular and poetic form in which Goethe presented this argument exhibits the power of overtly imaginative literary genres in experimenting with transformist thought during the decades in which palaeontology was first being formalised.

By the mid-twentieth century, this formalisation of palaeontology – its professional and institutional structures, methods and forms of tacit knowledge – was far advanced. As such, while evolution had become mainstream, the idea that animals found only as fossils, or large unknown animals in general, might still be living, had been pushed to the fringes, promulgated by men like the founder of modern cryptozoology, Bernard Heuvelmans. Floe Foxon's essay on 'Heuvelmans the Heretic and Hidden Animals' argues that cryptozoology, usually seen as a paradigmatic 'heterodox' science, should be understood in a more nuanced manner. Although its proponents vie for the acceptance of different forms of evidence (and career trajectories) to those endorsed by most mainstream zoologists, they by no means reject modern scientific methods wholesale. Moreover, while it is commonplace knowledge that many eminent historical naturalists cautiously endorsed the continued or recent existence of still-mysterious animals, often conceived of as prehistoric relicts, Foxon also shows that aspects of cryptozoological technique have had surprising pertinence in academic science during recent decades.

Maxime Philippe's essay, 'Performing Rock Art: Contemporary Resonances of Shamanism', examines the status of another highly contested palaeoscientific subject. Towards the end of the twentieth century, prehistorians Jean Clottes and David Lewis-Williams proposed a new interpretation of Palaeolithic cave art. According to Clottes and Lewis-Williams, cave paintings should be seen as features of shamanistic rituals involving the inducement of trance states and access to other worlds. This interpretation drew upon both ethnography and neuroscience and its compelling nature has even led to its appearance in a 2014 documentary by Werner Herzog. The shamanistic theory also received heavy backlash from archaeologists, not least due to purported similarities with New Age occulture. Philippe explores modern and contemporary art's interconnections with the theory, while attesting to the wider value that Clottes and Lewis-Williams's work – which depicts a Palaeolithic world in which boundaries between humans, non-human animals and rocks are permeable – may possess when addressing the environmental crises of the Anthropocene.

The subject of the next essay is another idea emerging, in part, from late twentieth-century archaeology and cryptozoology. During the 1990s, classicist and folklorist Adrienne Mayor began to develop the hypothesis that the mythical griffin – a beaked, gold guarding quadruped associated with Central Asia by the Ancient Greeks – was inspired by encounters with the fossil remains of ceratopsian dinosaurs like *Protoceratops*. Mayor has compiled fascinating evidence for this unexpected origin of the pervasive griffin myth, and it has been the subject of extensive and favourable media coverage, having been deemed plausible in works by authoritative scientists (e.g., Zalasiewicz, 2018: 75). Nonetheless, Mark Witton and Richard Hing's answer to the question in their essay's title, 'Did the Horned Dinosaur *Protoceratops* Inspire the Griffin', is, in effect, in the negative. Taking the hypothesis seriously, they investigate not only the evidence from the fossil record, ancient textual sources and the history of art, but also

from a long tradition of folkloric geomythology. Ultimately, they conclude that the griffin-*Protoceratops* hypothesis carries less conviction than its reputation would suggest.

The widespread promotion of the hypothesis leads us to the second thematic grouping of articles, which explore the role of popular culture in mediating, promoting and prolonging heterodox palaeoscience concepts. Alison Laurence's 'Of Dinosaurs and Intergenerational Culture Wars: Dinomania, Nostalgia, and the 'Missionary Lizards' of Young Earth Creationism' explores the seemingly contradictory phenomenon of Young Earth Creationists appropriating the popularity of dinosaurs to draw the public to museums promoting their own worldview. Far from the stereotype of rejecting ancient megafauna, Creationists embrace their popularity, connecting with cryptozoologists to symbiotically promote anti-evolution concepts. These promotional methods are not entirely dissimilar from the techniques used by mainstream natural history museums, demonstrating the porous boundary between orthodox and heterodox, and showing how advocates of the latter can use that similarity to attempt to become orthodox in the public eye.

The widespread popularity of dinosaurs which led to their exploitation by Creationists is explored further by Amy C. Chambers and Daniella McCahey in their article, '1990s Dinomania: Public and Popular Cultures of Palaeontology from *Jurassic Park* to *Friends*'. Those two extremely popular pieces of media, and the characters of Alan Grant and Ross Geller, helped shape the public perception of palaeontologists and dinosaurs. In particular, *Jurassic Park* is an instance of popular culture intervening in a scientific debate, that of avian descent from dinosaurs. This was not the first time that cinema had made such a claim; for example, in the previous decade, the films *Quest for Fire* and *The Clan of the Cave Bear* had popularised the notion of Neanderthal/Cro-Magnon interbreeding, decades before DNA analysis offered proof (Geroulanos, 2024: 153–155). However, the enormous popularity of *Jurassic Park* fully cemented in the public mind what at the time was a controversial view of dinosaurs – to the point that, as the scientific perception of dinosaurs continued to evolve into the new century, it was extremely difficult to get public acceptance to move beyond the dinosaurs of *Jurassic Park*. 1990s dinomania demonstrated the viability of popular culture as a sphere for exploring contested and exciting new ideas in mainstream science – and revealed how durable some of those scientific ideas could be, even as they drift back to heterodoxy from orthodoxy.

One of the cinematic descendants of *Jurassic Park* in the following decade were Peter Jackson's adaptations of *The Lord of the Rings*. This is the subject of Edward Guimont's article, 'J. R. R. Tolkien's Legendarium as Heterodox Palaeoscience'. While Tolkien's worldbuilding has been influential in the fantasy genre, less explored is the influence of palaeoscience concepts such as evolution and continental drift on his work. In turn, the popularity of *The Lord of the Rings* led to Tolkien's interpretations of those concepts becoming internalised by fans. Complex ideas about deep time are easier to be drawn into when accepted as part of Tolkien's extensive worldbuilding. As in the case of *Jurassic Park*'s dinosaurs, this meant that the ethnological notions of Turanianism and diffusionism which influenced Tolkien could be sustained far beyond the end of their viability as orthodox ideas. And, like the Creationists who used the popularity of dinosaurs to promote heterodox views, fans of Tolkien who see his fiction, or their adaptations, as representing opposition to multicultural modernity also preserve the now-heterodox science in those works. In the real world, no less than in Middle-earth, popular fiction can be a laboratory for not only preserving once-orthodox science longer after it turns heterodox, but – like those corrupted by the One Ring – also giving those ideas twisted afterlives.

One might argue that the preservation of heterodox ideas by popular culture gives them a hidden meaning, much like the status of hidden relict populations in cryptozoology. This heterodox field, and its connection to a venerable film franchise, is the topic of the final article, by Justin Mullis, 'From Cryptids to Kaijū: Exploring Heterodox Palaeoscience with Godzilla'. In many ways, this article incorporates elements of the previous three essays on popular culture, through its examination

of the international traditions of fringe science and how they can overlap and be reimagined in a sort of heterodox dialectic. Starting with its 1954 holotype, Godzilla has embodied this process. A Japanese production that has found global popularity, the original film *Godzilla* is typically cited as a response to the 1945 atomic bombings of Hiroshima and Nagasaki, or the 1954 exposure of the crew of the *Daigo Fukuryū Maru* to U.S. nuclear testing fallout – a popular response to the impact of Western science in Japan, in other words. Mullis shows that the Godzilla franchise is more subtly an embodiment of a long tradition of indigenous cryptozoology and heterodox palaeontological views stemming from Japanese cultural and scientific dialectics. Far from serving (exclusively) as a reaction to Western science, Godzilla has enabled the survival and popularisation of Japanese heterodox palaeoscience claims, transmitting them to Western audiences and fusing them with Western correlatives. This serves as an inversion of the relationship between Western and non-Western knowledge typically described in cryptozoological works (Guimont, 2019).

All of these articles – cryptozoology and popular media, modern science and ancient mythologies, the evolutionary ideas of museum staff and Romantic philosophers – demonstrate widespread fascination with pushing the boundaries of palaeoscience. A case study is historian Yuval Noah Harari's 2011 book *Sapiens*, which – despite proposing several decidedly heterodox arguments on the evolutionary history and cultural origins of humanity – was widely acclaimed by such liberal establishment figures as Barack Obama and Bill Gates, even as they began to publicly speak against the dangers of subscribing to 'alternative facts' promoted by right-populist figures counter to the statements of established experts (Geroulanos, 2024: 391–397). The breadth of this interest in and promotion of heterodox palaeoscience is so vast it raises another question: why exactly is this concept so important for our current socio-political moment? In 2019, the Society for American Archaeology (SAA) attempted to answer this question, dedicating an entire special issue of its official magazine, the *Archaeological Record*, to the topic of 'Pseudoarchaeology, Scholarship, and Popular Interests in the Past in the Present'. The specific impetus of the issue was to respond to the publication of former journalist Graham Hancock's book *America Before: The Key to Earth's Lost Civilization*.

America Before expounded on Hancock's decidedly heterodox claim that a civilisation technologically and culturally equivalent to Victorian Britain, and which he associates with Atlantis, spanned the globe until its destruction from a supposed comet impact in approximately 10,000 BCE (vii–ix). Hancock's related heterodox interpretations of human prehistory have been in circulation since the 1990s and echoed in multiple TV series, making him the largest figure in the genre since Erich von Däniken in the 1970s. This second-hand promotion of Hancock's ideas was the key to his success, more so than the books themselves. As anthropologist John Hoopes stated in his introduction to the SAA issue, pseudoarchaeology has been host to

> three episodes in the evolution of these ideas: (1) the Early Modern emergence of Neoplatonism, Gnosticism, and Hermeticism along with alchemy, astrology, and magic; (2) the Victorian-era revival of occultism and esotericism; and (3) their framing for mass media, especially trade books and television from the 1960s and 1970s to the present. (Hoopes, 2019b: 21)

With this heritage behind him, Hancock was building off a large wave of interest stirred by previous series, such as *In Search Of*, *Arthur C. Clarke's Mysterious World*, and *Unsolved Mysteries*. In line with this, it is perhaps not shocking that it was the *America Before* promotional tour which popularized Hancock and his ideas – but what was innovative was his publicity format. More than anything, Hancock's appearance on the extremely popular podcast, *The Joe Rogan Experience*, mainstreamed his book's heterodox notions (Hoopes, 2019a: 8–9). The SAA's efforts notwithstanding, Hancock's

appeal only increased in the subsequent half-decade, with him parlaying his widely-viewed appearances on the Rogan podcast to getting his own Netflix show in 2022, *Ancient Apocalypse*.

Hancock has been careful to describe himself as neither archaeologist nor scientist, both to help deflect criticism for his methodological and factual limitations, and to position himself as a populist heterodox figure, leading the crusade against elite scientific orthodoxy – placing him firmly in line with the right-populist critique of intellectual authorities. Crucially, Hancock firmly believes that his own methods are the true science, in contrast to the methods of his orthodox critics. Nor is Hancock alone in this belief in what constitutes palaeoscience (Feder, 2002: 16–41). Gordin has noted that

> those who have been called pseudoscientists think they are scientists. The reason they engage in these activities is not because they are anti-science, but because they are for it. Pseudoscience is the shadow of science: it is the reflection of the scientific community. The higher the status of science, the sharper the shadow and the more robust the fringe. The only way to eliminate pseudoscience is to get rid of science, and no one wants that. (2023: 104)

This also reflects skeptic Sharon A. Hill's notion of being 'scientifical': the tendency of amateur paranormal researchers who, despite (or perhaps because of) the fact that they are unfamiliar with scientific methods as practised by professionals, believe they are doing legitimate science, having seen the versions of 'science' depicted in popular media (2017: 5–26). In the US, this version of science and its approach to the past has been mainstreamed on ostensibly educational television networks like History, Discovery, Travel and Animal Planet. Representative shows have multiplied since the late 2000s and include, but are certainly not limited to, *Finding Bigfoot*, *America Unearthed*, *Ghost Hunters*, *Destination Truth*, *Mysteries at the Museum*, *MonsterQuest*, *The Curse of Oak Island*, *The Secret of Skinwalker Ranch* and *Ancient Aliens*.

To be fair, it was not the SAA's goal for its single issue to compete with that wave of popular promotion, nor would such a goal have been remotely plausible. Several of the issue's contributors have been at the forefront of continuing efforts to combat the promotion of heterodox palaeoscience and to understand how widespread its influence is. Perhaps foremost has been critic Jason Colavito, who has particularly targeted *Ancient Aliens* (2012) – alongside Hancock, perhaps the most prominent vector of modern heterodox palaeoscience, given that it has hosted multiple members of the U.S. Congress and is closely linked with the modern UFO disclosure movement. A number of archaeologists specialising in Indigenous American cultures have written on pseudoarchaeology, its motivations and how to effectively debunk it – a pertinent focus for members of that particular subfield, considering how modern palaeoscience orthodoxy emerged in the nineteenth century through early paleontology, archaeology and geology conducted in the context of European colonialism (Geroulanos, 2024: 45–62; Bashford et al., 2023: 1–5). Most prominent among that group of archaeologists and anthropologists are Feder (2002: 1–15; 2010: ix–xi; 2019: 247–49), Anderson (2019: 31–34) and Card, who in particular has explored how interpretations of the past influence modern views on paranormal concepts, especially as filtered through the popular media examples listed above (2018: 263–72; 2019: 26–30). Andrew Kinkella has chosen to take the campaign to the podcast realm with his own show, *Pseudo-Archaeology* (Roden, 2022). However, perhaps the most ambitious counterattack has come from Flint Dibble, who in April 2024 appeared on *The Joe Rogan Experience* to debate Hancock in person for nearly four and a half hours. Rejecting the typical defensive posture of those challenging far-reaching heterodox notions, Dibble's more aggressive denunciations of Hancock's unfounded ideas led even many of the latter's backers among Rogan's fanbase to see Dibble – and orthodox palaeoscience – as the victor (Dibble, 2024; Brewis, 2024).

Gordin notes that no one ever considers themselves a pseudoscientist. The term pseudoscience, he argues, is 'without real content [but] performs active work in the world' including 'what scientists thought about their standards, their position in society, and their future' (2012: 1–3). In contrast, to be a 'heterodox thinker' is a badge proudly worn by many who offer criticisms of what they see as not only mainstream science, but economics, politics and culture. These modern heterodox advocates are typically, but not entirely, on the political right (Young, 2024). Hancock, for example, proclaims himself to be of the left, despite most of the fanbase he cultivates being on the right (Colavito, 2022). To be heterodox is to be against the current establishment, so there is some inherent flexibility in the conceptualisation. At this point, it is perhaps unnecessary to recount how the last decade of global political upheavals have both benefitted from and accelerated populist resistance to authorities, both political and scientific; it would make sense, then, to assume that heterodox palaeoscience reflects that partisan alignment. The response to Hancock shows, to some degree, that this is true. However, within the orthodox field, there is perhaps a different story. Ideas from non-Western cosmologies, which until recently had been dismissed as heterodox views, are now starting to be more fully be understood as important and overlapping – if perhaps still incompatible – with Western science, the dialectical process of a new orthodoxy emerging out of former heterodoxy at work (Bashford et al., 2023: 13–14).

As with the case of the SAA magazine issue a half decade ago, it is too presumptuous to assume that this special issue will make much of an impact on current palaeoscience heterodoxies, and that is not its intent. Instead, we hope that the articles collected in this issue can demonstrate the utility of thinking about heterodoxy for those interested in palaeoscience, whether from the vantage point of scientists, historians, cultural and media critics, or linguists. The following articles, by sampling the breadth of heterodox palaeoscience, not only demonstrate the role that examining heterodoxy plays in understanding what makes for orthodoxy, but – appropriately enough – also indicate that an understanding of heterodoxy in palaeoscience is impossible outside of an interdisciplinary approach.

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